Digital Transformation by NRI

Nomura Research Institute Group

It's coming.
Information Technology is not only improving business process efficiency,
it is transforming business models.
We at NRI envision a future built on digital transformation in all industries.
Business model transformation through digital transformation requires not only speed,
but a medium- to long-term vision and management strategy.
Furthermore, digital transformation initiatives must be company-wide.

The time to build that future is now.

Page 18 features an AR (augmented reality) marker enabling you to view additional information in AR using the camera of your smartphone or tablet.

*AR may not be available depending on your communication environment, device, or OS version, etc.

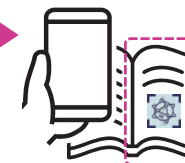**Scan**

Scan the QR code to access the website.

STEP 2

Tap the button

Tap the "Allow camera use" button to open your camera.
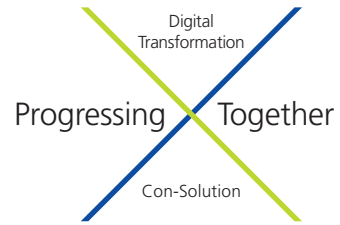
STEP 3

Position your camera

Position your camera to capture all of page 18. You'll see additional information and dynamic images.

Troubleshooting

- If your camera won't open, check the camera settings of your browser.

- If you don't see the AR effect, refresh your browser.

Digital Transformation × Con-Solution
Progressing Together

NRI will powerfully support the DX of clients by providing Con-Solutions

Shingo Konomoto
Chairman and President & CEO,
Representative Director, Member of the Board

NRI was born through the 1988 merger of two companies: the former Nomura Research Institute, Ltd. (Japan's first full-fledged private-sector think tank established in 1965) and Nomura Computer Systems Co., Ltd. (established in 1966 and the first in Japan to make use of a commercial computer in business). The management team that led the merger said, "When forecasting the advanced information society to come, there can be no think tank without a systems function, and there can be no systems company without a think tank function."

It was more than 10 years ago that I had an opportunity to learn firsthand the implied meaning behind those words. At the time, I was assisting a client in the development of a new business model. Today, online to offline (O2O) is a common business model. However, at the time, it was still a pioneering challenge. That was why we, the consulting segment, spent time with the client's CEO and business division to fully discuss what the target business model would be. It was on that basis that the IT solutions segment brought the project to completion. At the time, the consulting segment and IT solutions segment typically worked separately, and it was therefore an extremely unusual approach. It was then that I felt sure that like the case of this project, the transformation of business models through the utilization of IT would increase in the future.

It was also around this time that I also started handling the systemsrelated business as an officer. That was why I felt strong potential toward the future in the NRI business model. It is a unique business model known as Con-Solutions in which consulting and IT solutions run side by side with clients from the planning and concept stages,

creating and promoting business, while repeating the process of hypothesis testing. I came to the conclusion that we could powerfully assist the DX of clients through Con-Solutions.

It was with that belief that I was involved in the formulation of "Vision2022 (V2022)" – the long-term management vision that was announced in April 2015. Two years later, from around 2017, which I refer to as the first year of DX, moves to use IT to transform business models (DX) shifted into high gear. Having both consulting services and IT solutions as a set became a condition for project structuring. Roughly 30 years after the merger of the two companies, we now have increasing opportunities to fully exhibit the strength of Con-Solutions for the promotion of DX, with consulting and IT solutions running side by side with our clients.

Today, all of NRI directors and employees understand the true meaning of the words left more than 30 years ago by NRI forerunners at the time of the merger. You could say that the path we are currently following is one that was determined by the forerunners when NRI was founded.

Videos showcasing the DX activities of the NRI Group

Following our "Advent of Digital Capitalism" and "Designing Business" videos, we've released two new videos—"Human Resources & Organizations" and "Transforming Core Business"—on YouTube to convey the ideas, expertise, and capabilities of the NRI Group as a DX partner that solves our customers' digitalization challenges.
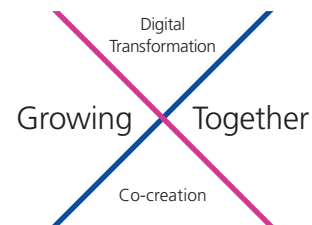

Human Resources & Organizations

Transforming Core Business

Watch the videos on NRI's official YouTube channel.

Co-creation of new value for the future beyond corporate boundaries

Corporate digital transformation strategy has shifted from the "Introducing IT to Business" era to "Creating Business through IT" era. To accelerate this trend, NRI is partnering with a variety of companies. Through leveraging each other's strengths such as the collective strength of diverse human resources and open collaboration, we are creating new value that overturns conventional wisdom.

Digital Transformation

Growing ✕ Together

Co-creation

Bringing together NRI's comprehensive capabilities in digital transformation

The contents are as of October 2020.

Business co-creation examples

bitREALTY

We support asset management for a wide range of investors through bitREALTY, an online real estate investment platform developed by real estate asset management company Kenedix and NRI. With our combined expert judgment, high transparency, and IT prowess, we provide genuine means of alternative investment for equity and bond investments.

https://www.bit-realty.com/

Business co-creation examples

KDDI Digital Design

Building on the strengths created by synergies between KDDI and NRI, KDDI Digital Design provides consistent support for development of corporate side digital transformation from strategy planning to business feasibility verification and system development. As corporate IT investment shifts toward business IT, which leads to sales growth and new services, we are contributing to the development of society and industry by focusing on early business realization and expansion.

https://www.k-digitaldesign.com/

Business co-creation examples

DMG MORI

Technium

Technium specializes in leveraging digital technology to offer systems and services to maximize output at production facilities. DMG Mori Seiki and NRI have combined their expertise to provide new services to support the versatile use of machine tools and contribute to the development of the manufacturing industry.

https://www.technium.net/

Business co-creation examples

NDIAS

NDIAS is a joint venture between global automotive parts manufacturer Denso and NRI Secure Technologies, Ltd., NRI's Managed Security Services Provider (MSSP) subsidiary. Leveraging both companies' strengths, we provide integrated security diagnosis and consulting services for in-vehicle electronic products from the development stage to after-launch support.

https://ndias.jp

Business co-creation examples

JAL Digital Experience

JAL Digital Experience combines JAL's customer base and high-quality services with NRI Group's data analysis and AI technologies to gain a deep understanding of needs of each customer. Through this system, we offer personalized suggestions for rich experiences and new lifestyles while traveling and in daily life.

Business co-creation examples

BOOSTRY

Nomura Holdings and NRI co-founded BOOSTRY to build a new platform using blockchain technology for corporations to issue and distribute securities and other financial products. With BOOSTRY we will introduce a new form of financial technology to the market.

https://boostry.co.jp/

Business co-creation examples

Financial Digital Solutions

QUICK and NRI came together to found Financial Digital Solutions to respond to future changes in the financial environment, as well as the diversifying needs of financial institutions. We will introduce more efficient solutions through maximizing the development capabilities and expertise of both companies.

https://www.financial-ds.jp/

Nakane Satoshi | Kibe Yuichi | Tsunoda Mitsuhiro | Hokazono Yasunori

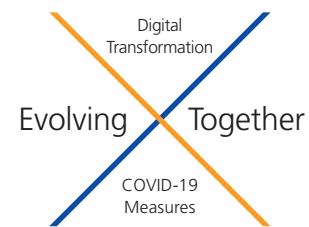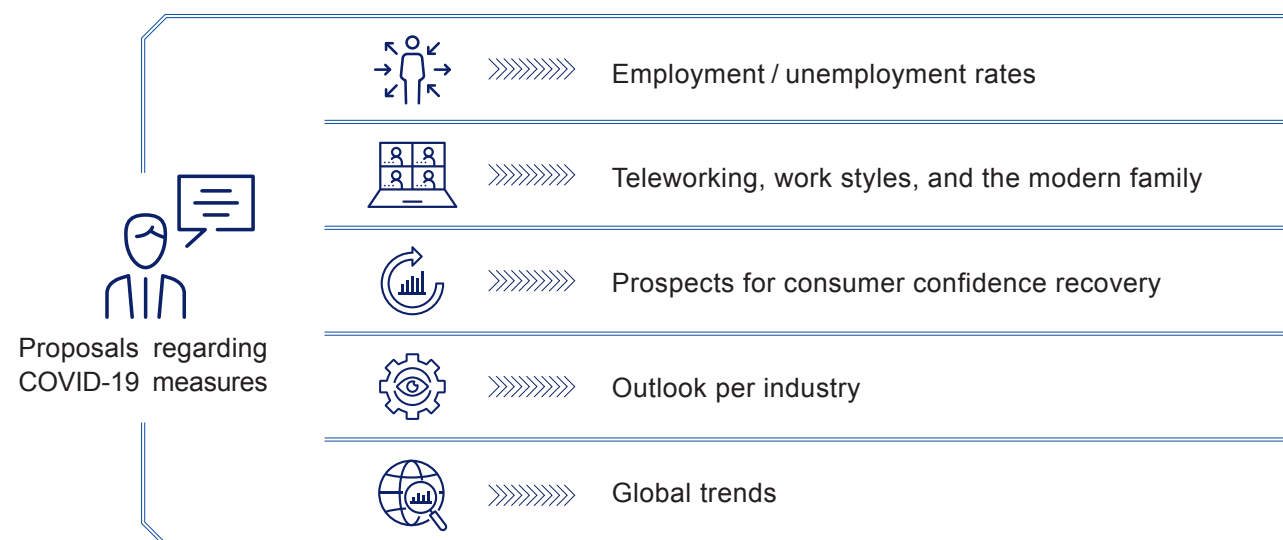## The NRI Group's proposals regarding COVID-19 measures

Digital Transformation

Evolving ✕ Together

COVID-19 Measures

Experts from the NRI Group have been proposing measures to deal with the effects of COVID-19 since March 2020.

Presented from a variety of perspectives, many of the proposals emphasize the importance of DX in fighting the novel coronavirus.

Read the proposals on NRI's official website.

Proposals regarding COVID-19 measures

- Employment / unemployment rates
- Teleworking, work styles, and the modern family
- Prospects for consumer confidence recovery
- Outlook per industry
- Global trends

NRI JOURNAL

Innovation magazine that generates hints for the future

Co-creating value with DX

NRI Journal offers a platform for experts from the NRI Group to discuss the latest topics and the future of society in a collection of web articles. Content covers many fields, including management strategies such as macroeconomics and DX, and technological trends like AI, IoT, and information security.
The next few pages feature four DX-themed articles from the collection.

All NRI Journal articles can be found on NRI's official website.

Tamura Koutarou | Sasaki Takuro | Uchida Eri | Mizuko Tsutomu

Tri Petch Isuzu Sales x NRI Thailand x Brierley Japan: Committed to Increasing Customer Loyalty in the Thai Automobile Market

Article URL https://www.nri.com/en/journal/2020/0210

For many years, Tri Petch Isuzu Sales ("Tri Petch Isuzu") has sold commercial vehicles and pickup trucks in Thailand. Tri Petch Isuzu, which holds a share of over 30% of sales of pickup trucks, their greatest strength, sensed changes in consumer behavior in Thailand resulting from the advancement of digitalization, and joined with NRI Thailand and Brierley+Partners Japan ("Brierley Japan") to develop the web application "my-ISUZU." It is stepping up its marketing efforts to maintain relationships with customers through maintenance and the like, leading to repeat future business from the same customer.

Mr. Futoshi Suzuki, Vice President; Mr. Reo Nonaka, Vice President; and Mr. Junya Yamamoto, Tri Petch Isuzu Sales
Yuichi Kibe, Group Manager, Automobile DX Consulting Group, NRI Thailand

Satoshi Nakane
Vice President, Brierley + Partners Japan

Consumer behavior has changed along with advancement of digitalization

Until recently, Tri Petch Isuzu's marketing activities centered on engaging in communication with customers and bringing customers to their retail stores, of which they have around 330 all over Thailand, to encourage customers to buy new cars. For the past several years, however, as smartphone use has skyrocketed, purchasing styles have shifted to customers acquiring information on their own, considering products through comparison with those of other companies, and visiting retail stores to negotiate. This meant that innovation of marketing activities was necessary. Tri Petch Isuzu realized that with the increasing tendency for people to gather information using websites and social networking services (SNS) such as Facebook, online-based transmission of information and efforts to maintain customers are becoming ever more important.

"We considered various CRM (Customer Relationship Management) tools, believing that an online-based structure was essential to maintain contact with customers through maintenance and the like after vehicle purchases and reinforce the likelihood of future purchases. We joined with NRI Thailand because we comprehensively considered their good understanding of our business from our partnership with them in building systems for our retail stores, Brierley Japan's functional flexibility, and the like," says Tri Petch Isuzu Vice President Nonaka.

This cooperation led to the development of the customer-oriented web application "my-ISUZU." The application is linked to online data such as purchase and maintenance histories managed by retail store systems, and enables information display and message transmission individually optimized to each customer's behavior history. For instance, it involves notification of maintenance timing, transmission of information on assorted coupons and campaigns, a loyalty program, and a function for chatting with retail stores using LINE[*1].

Development method traversing organizational and national barriers

Since the decision to release my-ISUZU had been made by the time of the first pickup truck full model change in eight years, the development had to be completed in about seven months. In order to increase development speed so that the project could be completed in this short time span, a phased approach[*2] was adopted in which functions were added in stages. "We had many ideas of functions we wanted to provide to our customers, but we prioritized developing functions that would encourage registration to my-ISUZU. We needed to have an interface design that would appeal to Thai customers and use expressions in Thai that were appropriate and would reverberate with our customers, and the help of Thai members in various roles was essential. Therefore, each of our members was strongly intent on making sure to put full effort into the project as a team, traversing the boundaries of a single company or organization," says Tri Petch Isuzu's Mr. Yamamoto as he reflects on the project.

Since off-shore development based in Indonesia was employed, increased global cooperation was necessary for the project. Under the demand for quick development, Tri Petch Isuzu business members traveled to Indonesia to communicate directly with the engineers there. "In order for multinational members to come together to develop with an emphasis on speed, careful and attentive communication is essential. Quick decision-making is also critical. Tri Petch Isuzu executives were deeply aware that the project would not succeed unless the business department got actively involved and acted in concert with the IT department, so they made precise decisions on necessary matters with an extremely short turnover time. That made it easy for development to proceed smoothly," says NRI Thailand's Yuichi Kibe.

Aiming for a service that customers love

More than 300,000 people registered for my-ISUZU in the six months after it was released, and users continue to increase at a good pace. Going forward, the company aims to develop the application as a platform for providing vehicle sales financing, vehicle physical damage insurance, and other assorted services offered by Tri Petch Group, and to provide a more convenient and efficient

my-ISUZU screen image

customer experience.

"As automobile sales competition heats up, maintaining and cultivating brand loyalty among customers requires focusing on the customer experience after a sale, such as through vehicle maintenance and related services. By providing a sophisticated customer experience and continually analyzing customer behavior gleaned through conventional customer service as well as customer behavior on my-ISUZU, we will be able to predict the timing at which a customer will buy a new vehicle and otherwise be able to create a starting point leading to subsequent vehicle purchases," says Brierley Japan's Satoshi Nakane.
"I think that we will see the true success of my-ISUZU when users of the application, such as customers and retail stores, start to come to us with ideas and uses for the application that we hadn't thought of, telling us, 'we want this kind of function or service.' In order to make that happen, we aim to build a strong foundation of functions that customers will want to use. Retail stores also have very high hopes for my-ISUZU, so we hope to develop it further as a communication tool that customers will love," says Tri Petch Isuzu Vice President Suzuki, describing his hopes for the future.

*1 LINE: LINE can be used not only in Japan but also in Taiwan, Thailand, Vietnam, Indonesia, and all over Asia. In Thailand, LINE is so prevalent that 90% of smartphone users are said to use it.

*2 Phased approach: This method involves performing development in stages by separating out different functions rather than developing and building a system all at once.

The Current State of AI and its Use in Business

Article URL https://www.nri.com/en/journal/2020/0406

The Second Knowledge Graph Reasoning Challenge was held in December 2019, sponsored by the Special Interest Group on Semantic Web and Ontology of The Japanese Society for Artificial Intelligence. In this contest, the challenge was for AI systems to examine five Sherlock Holmes stories and deduce the culprits, as well as to demonstrate the evidence for the determinations. Nine teams took part in the challenge, with NRI taking first prize for the second year in a row. We sat down with NRI members Mitsuhiro Tsunoda and Yasunori Hokazono and NRI Digital member Kotaro Tamura, who participated in this contest and who have been engaged in AI-related solutions development, and asked them about the current state of AI and the main ways in which it is being used in business.

Mitsuhiro Tsunoda
Digital Financial Business Planning Department 1

Yasunori Hokazono
Digital Financial Business Planning Department 1

Kotaro Tamura
NRI Digital /
Digital Financial Business Planning Department 1

Smart speaker AI is "in development"

As a technology that can do things like play music, operate home electric appliances, and read the news aloud based on voice instructions, smart speakers are products that make AI feel more familiar to us, and 2019 saw them become a hot topic with numerous companies releasing their own versions. Mitsuhiro Tsunoda, however, told us that "smart speakers are still in the development stage," for reasons he went on to explain as follows.

"Current smart speakers require a person to say something for an AI to interpret, so people have learned to speak in a way that's tailored to the AI. If the AI can't understand a command, it just replies 'I don't understand' or something similar, and it's difficult for the user to teach the AI what they want it to do when they give a certain command. This is where the capabilities of smart speakers currently stand."

AI-based natural language processing—where AI can understand a person's words and respond appropriately—is a challenge, and in particular, informal dialogues with chatbots or AI are an area where there is plenty of room for advancement going forward, says Yasunori Hokazono.

"I think people who've used chatbots are aware that compared to asking questions to a human being, chatbot dialogs require you to choose the answer yourself and input the appropriate keywords and such, so they aren't really smart conversation partners. That's because it's difficult for AI to understand the meaning of words based on the context and to grasp the speaker's intention. With the arrival of smart speakers and such technologies, it does feel like the language processing field has made some advances, but my sense is that this tech hasn't yet gotten to the point where it's truly useful."

Kotaro Tamura also points out that the current lack of standards for evaluating AI is a problem.

"There are a lot of translation services that use AI, for example, but there aren't any standards for assessing what a good translation is. I think the ways in which we frame our standards for evaluating AI processing, namely ones that value translations in line with human sensibilities, will be important going forward."

For deploying AI in business, a "long-term perspective" is essential

Meanwhile, the use of AI-based natural language processing in business domains seems to be on the rise. Hokazono gave the following description as a specific example of this.

"In the context of AI-based language processing, the area that's reached practical implementation the fastest is translation. It's probably because a lot of translation data such as original texts in English and Japanese has already existed, which can be used in AI learning. What's more, progress is being made all the time with applications like document classification for grouping numerous documents, and summarizing long texts, or automatically generating commentaries from financial statements and such."

One such AI solution is NRI's "Shingan". "Shingan" identifies extracts specific data from a document. For instance, Shingan can automatically pull out certain information such as document names, contract parties, contract sums, and start and end dates from contracts.

With things like contracts relating to financial products, in some cases the document can be over 100 pages long. Reading and checking the content in order from the beginning would take a considerable amount of time. However, using "Shingan" makes it possible to automatically extract the conditions for deciding whether to accept or annul a contract, and also enables you to drastically increase the efficiency of contract-related operations.

In terms of the characteristic features of this solution, Tsunoda gives an example of how it can perform relearning.

"The way 'Shingan' is set up is that you give the system information about where in the document certain data is written, and then it does self-learning, and even if it makes an error you can teach it the correct answer so that it re-learns. In other words, the more you teach it, the smarter it becomes, and that's a big advantage of 'Shingan'."

These days, AI solutions are continuously coming onto the scene, but Tamura points out that companies would do well to think from a long-term perspective when rolling them out.

"Even solutions that are purportedly loaded with a general-use AI still need to be customized to suit the particular company or its operations, and from a long-term perspective as well you have to consider how to go about relearning. In that sense, it's about more than just deciding simply whether something can or can't be done in a PoC (proof-of-concept). You also have to look at whether the necessary features are in place for longer-term use."

Finally, Hokazono had the following to say about NRI's strengths in utilizing AI in business.

"There are cases, for example, where once your operations have been organized, retooling your data will enable you to automate those operations with a simpler system than AI. NRI's strength is that we don't have an AI-based philosophy, but rather we get an upstream bird's-eye view of our customers' operations and systems, and are able to make optimal suggestions based on the results."

While AI has become a major trend, we are not at the point where it can be applied to literally anything. For this reason, it's important to consider things from the viewpoint of what problems you're trying to solve with AI, and whether those problems can't be solved without AI.

Evolving Cloud Services and Changing Awareness of Companies

Article URL https://www.nri.com/en/journal/2019/1010

A cloud provides computing services, data storage services, and application processing services over a network. Today, many companies are switching to cloud computing because they can use the system flexibly without having to build in-house physical servers and storage. We spoke to Takuro Sasaki of NRI Netcom, who has been long involved in the development of web-based systems, about the latest trends in cloud computing.

Takuro Sasaki
General Manager of Cloud Business Promotion Department, NRI Netcom, Ltd.

Cloud enables flexible server operations and machine learning

When did Japan start using cloud services?

It was around 2010. Initially, not many companies adopted it due to security concerns and other factors. However, awareness about cloud computing increased after the term "Cloud-first" was introduced, which promotes the use of cloud-based solutions before considering other alternatives. If I talk about the projects I am involved in, I often make proposals using a cloud environment rather than on-premises, where companies own and operate servers and other hardware.

Why has cloud usage increased?

This is because of the benefits and increased awareness of the cloud. In the case of online shops, for example, dealing with the peak and off-peak periods was a major challenge. If companies made provisions as per the peak demand, the resources utilized daily would be low and costs would be high. Conversely, if they made provisions tailored to day-to-day demand, they would be unable to cope with the peak demand, resulting in a decline in quality of service. The solution to this dilemma was the cloud, which can flexibly change its capacity to meet the demands of the peak as well as off-peak periods.

Big data and data analytics, which have been in the limelight recently, require large-capacity storage and multiple servers. Earlier, only a few companies were able to make such large investments; however, with the emergence of cloud technology, even students can use advanced analytics tools such as big data and machine learning affordably.

In the field of system operation as well, the time and effort required to respond to problems such as hardware failure have greatly reduced. Using such tools to automate, streamline, and reduce manpower from operations can help in coping with problems such as human resources shortages.

New activities such as multi-cloud

The number of cloud vendors is very limited as it involves a huge amount of investment in large-scale infrastructure.

The three major vendors are Amazon, Microsoft, and Google. According to the ranking of cloud vendors published annually by the U.S. research firm Gartner, these three companies are expanding their services year by year and widening the gap with other competitors in the market.

Are there any cases where cloud services of multiple vendors are used in combination?

Yes, it is called a multi-cloud. While Amazon and Microsoft have a strong corporate system, Google is good at analyzing all kinds of data, including websites. Thus, different vendors have different areas of expertise. In recent years, there has been a growing need to cross-analyze how people interact in the real world and on the web. As a result, there is a growing trend of using a combination of Amazon's core cloud and Google cloud for data analytics.

Cloud is not an alternative to on-premises architecture

What advice do you have for companies that want to leverage the cloud?

Many companies want to adopt the cloud because they think it is cheaper, but the cost of on-premises hardware is not as expensive as it used to be. Certainly, from the hardware perspective, companies may tend to think that the cloud is not fetching them any cost benefits, but in that case also, it is important to consider not only hardware, but also other costs including data center renting fee, electricity charges, and labor costs.

Leading companies are embracing the cloud for advanced analytics and services that are not possible on-premises. It is important to understand that not only the cost but also the usage levels are changing.

Moreover, cloud adoption should be supported at the organizational level, rather than having each department work separately. In particular, as multiple departments are often involved in acquiring the necessary data, the organization as a whole needs to consider questions such as who manages the data collectively.

How would you like to promote and support cloud utilization in the future?

The full-scale adoption of cloud is expected to grow in the future. The NRI Group intends to make the most of its collective strengths to support clients' use of the cloud. For this, NRI, NRI Digital, and NRI Netcom will work together, consolidating their respective expertise of business consulting, data utilization, and implementation, to support clients as business partners.

A Strong and Flexible IT Infrastructure that Supports Society -- Efforts for Sustainable Quality Maintenance

Article URL https://www.nri.com/en/journal/2020/0619

In this current world where informatization is rapidly progressing, information systems used by many users can be seen as social infrastructure. IT infrastructure that supports such systems requires sustainable quality maintenance, and thus ensuring environmental protection and control as well as information security has become more important than before. We spoke with Tsutomu Mizuko, who is responsible for facility management of the data centers, and Eri Uchida, who is responsible for supervising private cloud services, regarding the efforts of NRI, which has developed several data centers in Japan and has been providing cloud services.

Tsutomu Mizuko
DC Management Department,
Data Center Service Division

Eri Uchida
Cloud Computing Service
&Planning Department, Cloud
Computing Service Division

Efforts to reduce environmental impact

Because data centers, cloud services, and other IT infrastructure are jointly used by many users, they can drastically reduce CO_2 emissions when compared to cases of individual users operating their own equivalent systems. In other words, it can be said that such a business model itself is contributing to the reduction of our environmental footprint. On the other hand, energy consumption of a consolidated IT infrastructure could not possibly be said to be low, and the IT infrastructure operated by NRI is no exception. In light of the foregoing, to fulfill its responsibilities as a business operator, in its daily operations and equipment design, NRI is generating various ideas for reducing its environmental impact. For example, Tokyo Data Center I, which was completed in 2012, has adopted free cooling, which uses external air during the winter months for cooling, as well as solar power generation and a double deck system developed by NRI to achieve superior environmental performance. This double deck system is a system that completely separates the areas where computers are placed from areas where air conditioners, power supplies, and other maintenance equipment are installed, and uses pressure differences between the maintenance areas and computer areas to deliver cool air. By repeating demonstration experiments and obtaining patents, NRI has succeeded in drastically reducing the amount of power necessary to cool ICT equipment. Through such activities, greenhouse gas emissions from NRI Group's business activities in 2018 were 38% less than the emission levels in 2013.

Operations that continue to maintain high control quality and security quality

In addition to taking the environment into account, for a safe and secure operation of IT infrastructure, it is extremely important to ensure control and information security. In particular, high-level control is necessary for financial systems. Based on guidelines issued by the institutions, standards are specified, risks are assessed regularly, and measures are carried out by NRI internally. Further, by independent organizations regularly conducting audits and assessments regarding such operations, and performing improvement processes, a high level of control and security quality is being ensured and maintained. One example we can give is that NRI is not only deploying seismic isolation functions, power generation and power storage functions, reserve equipment, unauthorized intrusion prevention functions, and other equipment and functions, it is also routinely conducting inspections and training in terms of operations to ensure that such equipment and functions will work appropriately in an emergency. Regular training sessions that include large-scale failure drills are carried out at least 4,100 times a year. Further, NRI is continuing with its efforts to learn from risk detection activities and examples from other companies, establish rules and hands-on knowledge through training, and enhance and establish awareness regarding control and security quality.

Obtainment of many international certifications

As a result of such activities, NRI has obtained numerous international certifications. In 2014, NRI received the M&O stamp of approval, the first in Japan. This certification related to facility management and data center management was established by the Uptime Institute in the U.S., in light of a tendency even at facilities that satisfy standards for operational issues to occur and for services not to be provided at the expected level. Further, as evidence that NRI's internal control is performed properly, NRI has received SOC2 reports. These reports are assurances by an audit firm that internal control relating to entrusted services meets standards, and NRI has received this report every year from the perspective of availability and security. In addition to the foregoing, in relation to information security management systems, ISO/IEC 27001 and ISO/IEC 27017 certifications have been obtained. Of course, obtainment of certifications in and of itself is not the goal, but NRI believes that its efforts to obtain such certifications will lead to even better PDCA and provision of a sustainable IT infrastructure.

Being a sustainable IT infrastructure

Regarding NRI's efforts to reduce environmental impact, NRI is aiming to "derive 36% of the electricity used at the data centers from renewable energy by 2030", and "derive all electricity used for business activities from renewable energy by 2050". To realize such goals, it will not be sufficient to continue only with conventional energy conservation measures. Going forward, it will be necessary to consider how the energy derived will be used.

Further, to maintain and improve safe and secure quality, continuation of personnel development and fostering of an appropriate climate will remain crucial. Problems are not permitted in relation to data centers and cloud services that support societal infrastructure, and the situation is such that it would be difficult to learn from mistakes. In such an environment, how will we accumulate and continue to succeed knowledge and experience? NRI believes that it is important to continue with the various activities discussed earlier, utilize AI and big data, and further enhance quality.

DX professionals in the NRI Group

AR technology shows you information such as each expert's specialties and papers they've written.
AR content is in Japanese.

Digital
Transformation

Challenge X Together

NRI PEOPLE

Naoaki Fujino

DX operations and management pioneer

Junichi Yoshida

Keiko Kataoka

Promoter of aaS in real estate

Problem solver for digitalization in the financial industry

Hideyuki Fujii

Atsushi Kametsu

ID management security specialist

Shohei Ishiwata

Advanced technology expert

Digital capitalism promoter

Digital Industrial Business Planning Department
Naoaki Fujino

[Fields of expertise]
Strategizing, planning, conceptualizing, and supporting the implementation of digital transformation in omni-channel retailing, Industry 4.0, physical internet, and MaaS

NRI Digital
Junichi Yoshida

[Fields of expertise]
Designing and promoting DX strategies, developing new business, real estate DX, marketing analytics, multicloud computing

Digital Financial Business Planning Department 1
Keiko Kataoka

[Fields of expertise]
Planning digital strategies for financial institutions; collecting and applying non-financial data

NRI Secure Technologies
Hideyuki Fujii

[Fields of expertise]
Domestic and overseas data governance, management support; cyber security system design, strategy planning support

DX Consulting Department
Shohei Ishiwata

[Fields of expertise]
Supporting digital transformation in society, industry, management, and business through planning, analytics, and design

IT Platform Technology Strategy Department
Atsushi Kametsu

[Fields of expertise]
Trends in IT system technologies, including knowledge management and groupware, and emerging technologies like wearable devices, VR, and AR

This entire page is an AR marker. Use your smartphone or tablet to view detailed information on each expert.
See pages 2 and 3 for instructions on using AR.

Dream up the future.

Nomura Research Institute Group

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https://www.nri.com/en/journal

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